Concord-Carlisle Regional High School

Meeting #3

April 6, 2011

omr architects

Agenda

Introduction

Project Update

Sustainability

Q & A

Consultant Introduction

- Bill Brown – Brown/Sardina (Landscape)
- Steve Ventresca – Nitsch Engineering (Civil)
- Andrea Ranger – KEMA (Sustainable Design)
- Dom Puniello – GGG Engineering (Mechanical)
- Carlos DeSousa – GGD Engineering (Electrical)
- Chris Garcia – GGD Engineering (Plumbing/FP)

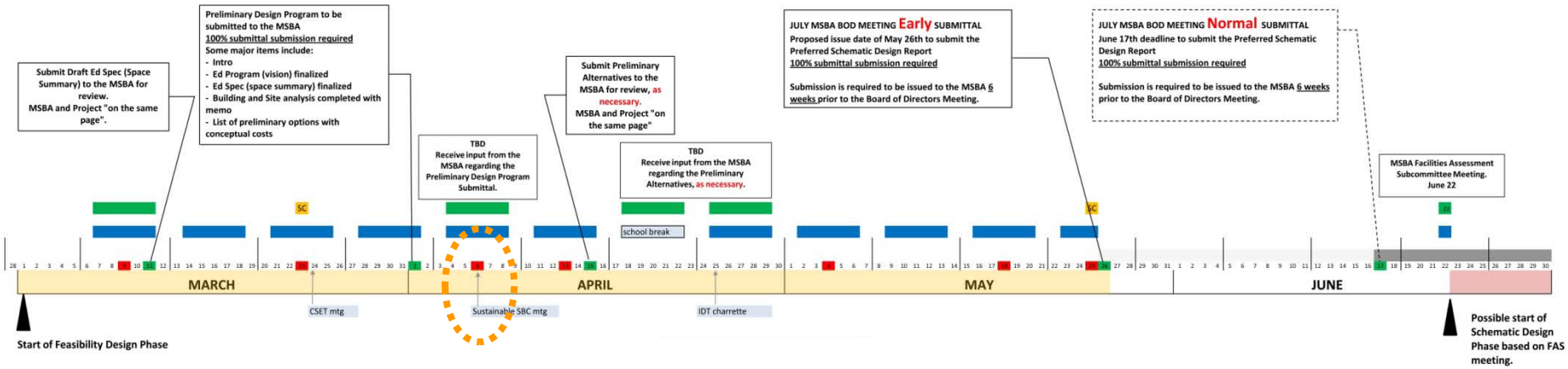
CCHS Feasibility Study Work Plan

Groundwork	o *Prepare contract* o *Obtain and review all available/ pertinent documents* o *Prepare schedule and work plan*	o *Review existing conditions information* o *Attend Site Based Committee Meeting* o *Conduct User Group meetings and Prepare Space Summary*
Meeting # 1	**Goals, Values and Space Summary**	
3/09/11	**Objectives** o Review schedule and process o Review goals, values o Review proposed space summary	**Follow-up** o Site walk thru with Engineers and Facilities Manager o Submit draft space summary to MSBA for initial review o Meet with MSBA for kickoff meeting o Prepare Preliminary Alternative concepts
Meeting # 2	**Vision, Space Summary and Preliminary Alternatives Concepts**	
3/23/11	**Objectives** o Review Educational Vision, goals and values o Review Preliminary Alternative Concepts o Approve Initial Space Summary and PDP	**Follow-up** o Complete Preliminary Design Program Submittal for MSBA o Meet with MSBA o Develop Preliminary Alternatives
Meeting # 3	**Sustainability Goals**	
4/06/11	**Objectives** o Discuss sustainability goals and net zero options with team	**Follow-up** o Develop Preliminary Evaluation of Proposed Alternatives
Meeting # 4	**Preliminary Evaluation of Proposed Alternatives**	
4/13/11	**Objectives** o Review Preliminary Evaluation of Proposed Alternatives	**Follow-up** o Submit Preliminary Alternatives to MSBA for initial review o Meet with MSBA o Develop Final Evaluation of Selected Alternatives
Meeting # 5	**Finalize Preliminary Alternatives**	
5/04/11	**Objectives** o Review and Approve Preliminary Alternative(s)	**Follow-up** o Prepare Final Evaluation of Alternatives
Meeting # 6	**Final Evaluation of Alternatives**	
5/18/11	**Objectives** o Review Final Evaluation of Alternatives o Confirm Preferred Solution	**Follow-up** o Prepare Preferred Schematic Report
Meeting # 7	**Preferred Schematic Report**	
5/25/11	**Objectives** o Review and Approve Preferred Schematic Report	**Follow-up** o Submit Preferred Schematic Report to MSBA o MSBA Facilities Assessment Subcommittee and BOD Vote

Feasibility Study Schedule

Concord-Carlisle High School Feasibility Study Phase Schedule

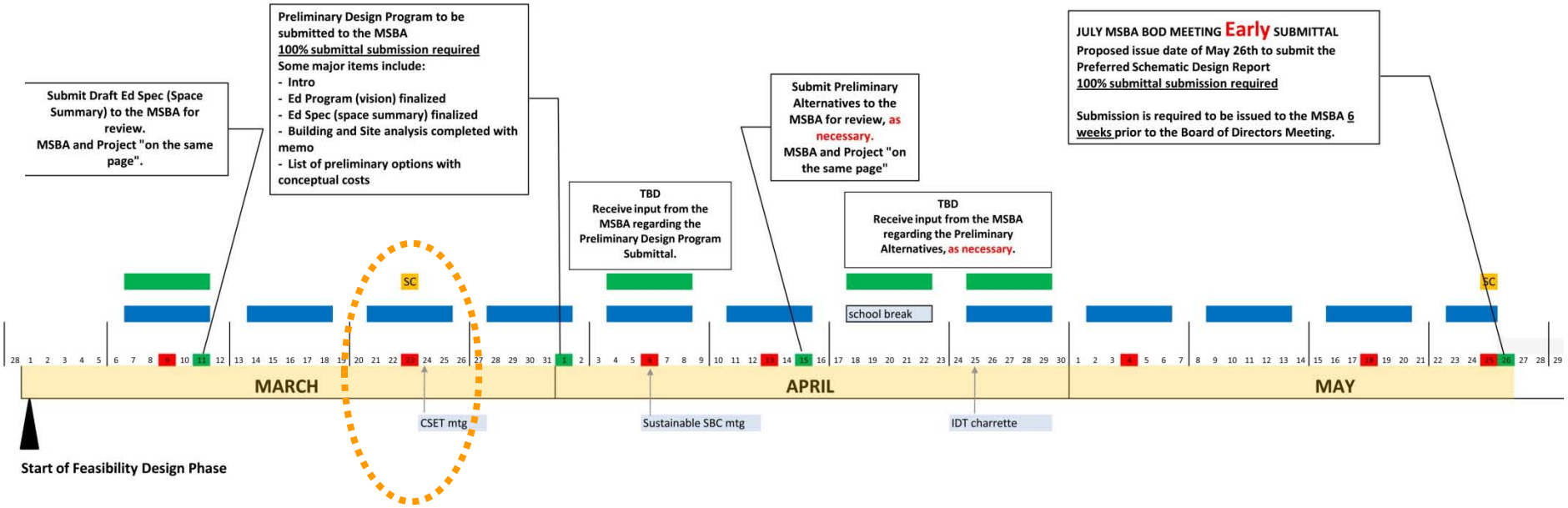
updated 3.25.11



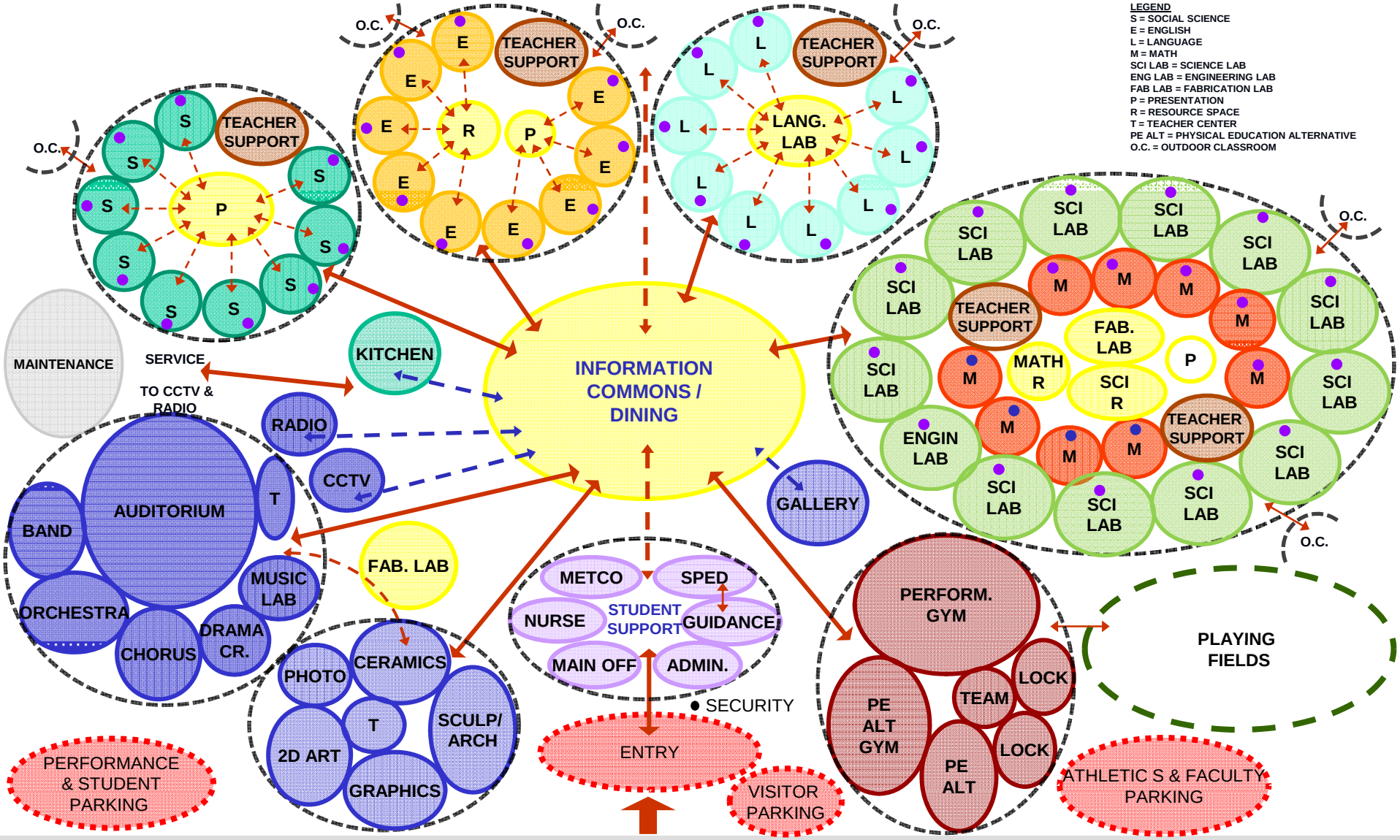
Feasibility Study Schedule

Concord-Carlisle High School Feasibility Study Phase Schedule

updated 3.25.11



Space Adjacency Diagram



Elements of Sustainability

Site

- Building Orientation
- Overall Disturbance

Water

- Conservation
- Stormwater Management

Energy

- Building Use
- Site/Source

Materials

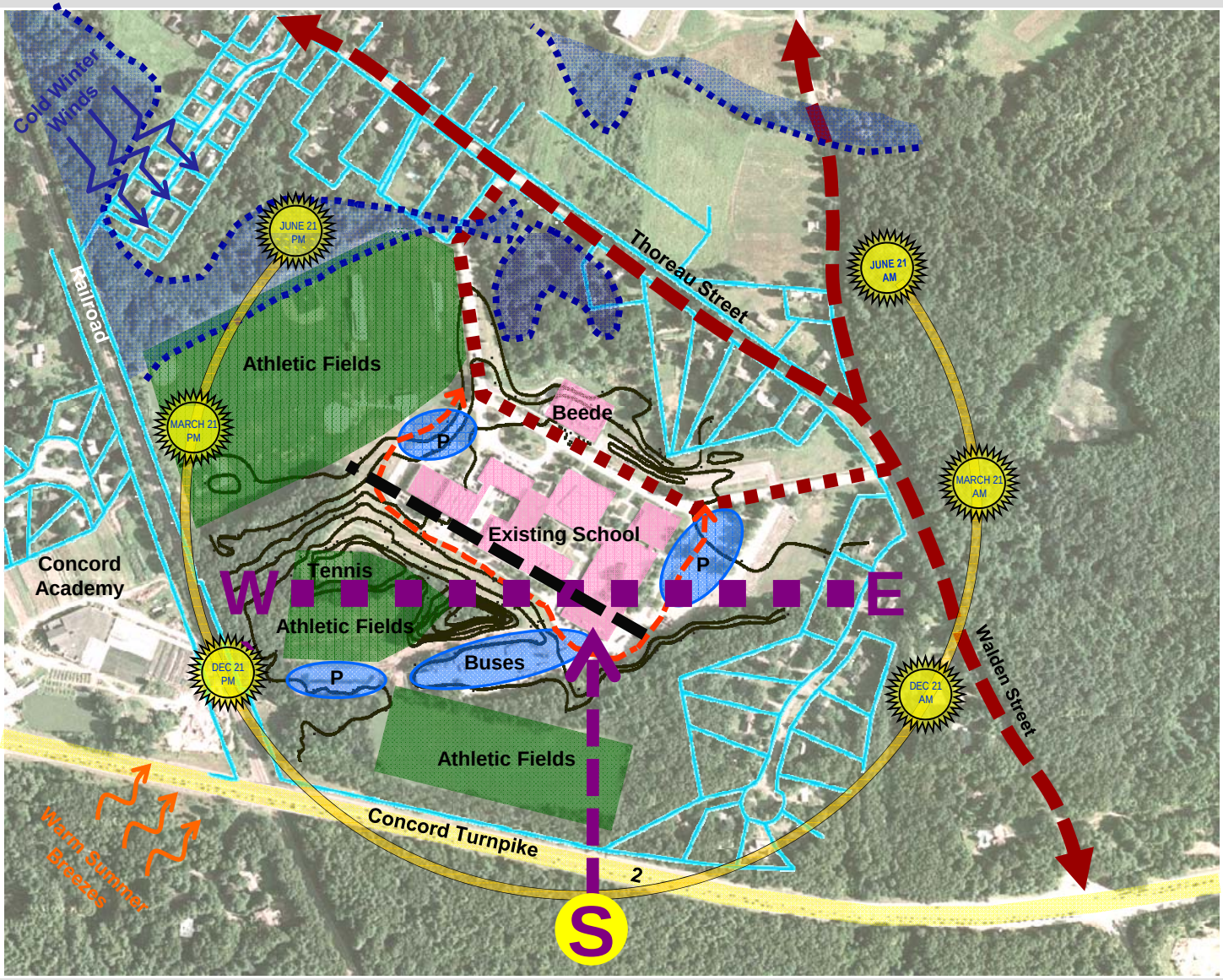
- Embodied Energy

IEQ

- Daylighting
- Ventilation

Operations

Building Orientation



- Sun/Winds
- Topography
- Access
- Parking
- Neighbors
- Wetlands
- Fields

N

Site, Civil and Landscape

Environmental Garden

- **use a part of the Environmental Science curriculum**

Green Roofs

- **Reduces heat island effect**
- **Extensive or Intensive**

Site, Civil and Landscape

Athletic Fields and Irrigation

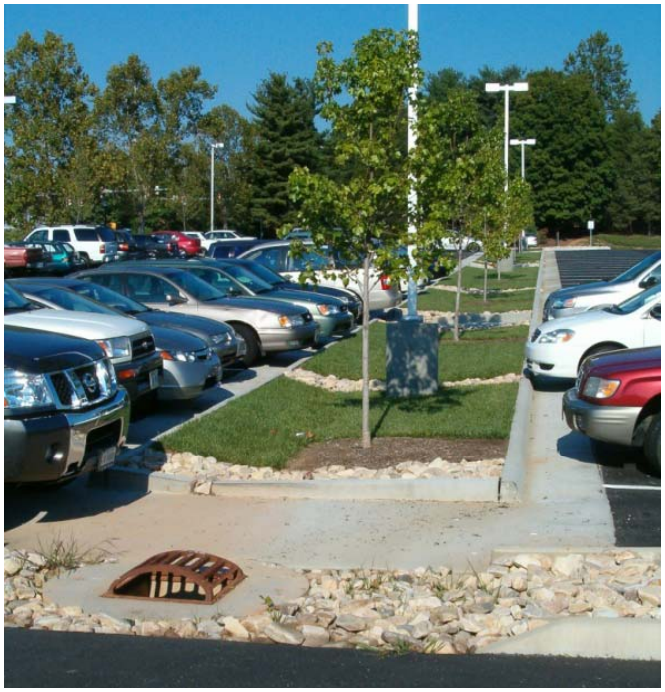
- Fields are allowed to be irrigated under CHPS and LEED
- Investigate using cisterns or wells as a water source
- Irrigation moisture sensors are required
- Soil organic content
- Grass types
- Synthetic turf can only qualify for points under recycled materials but not water use
- Irrigation commissioning

Bike Lanes and Sidewalks

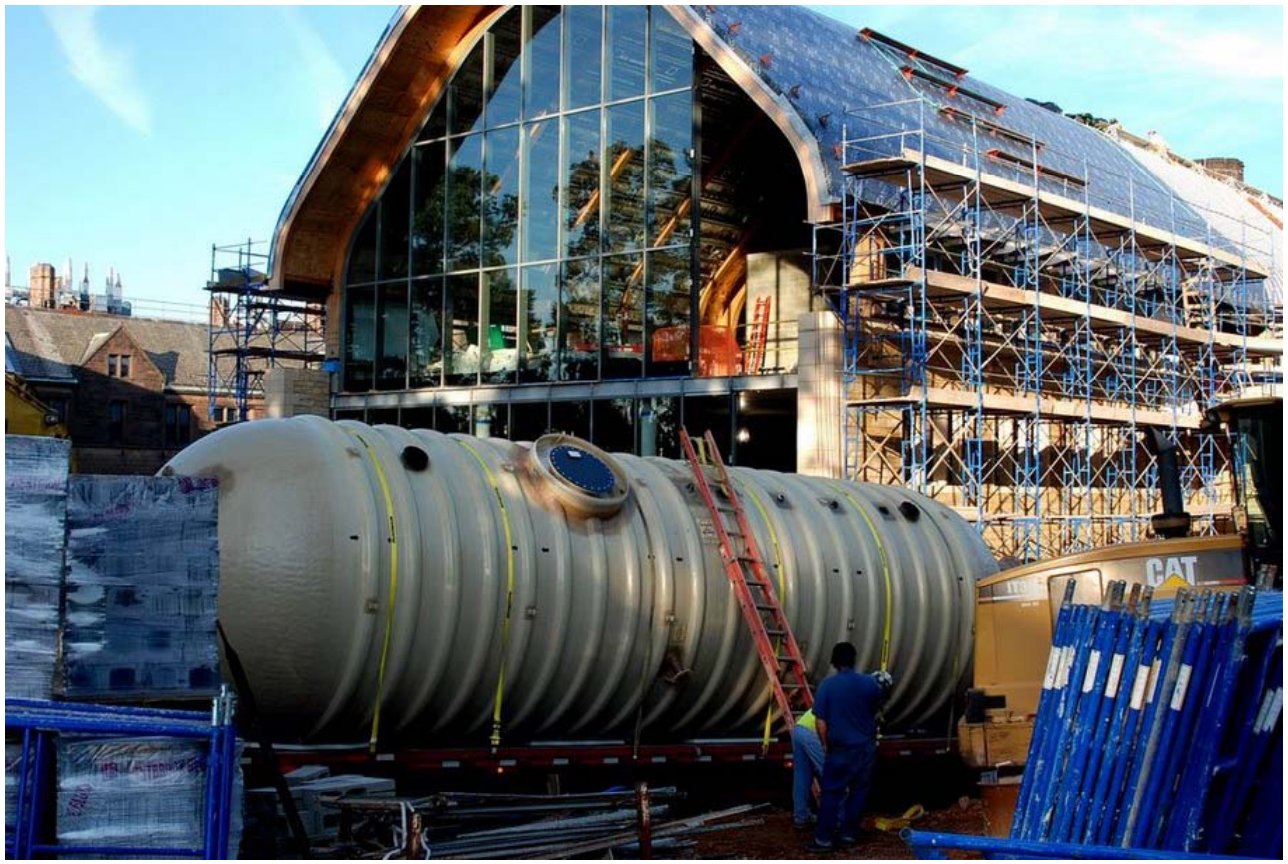
- LEED requires bike lane, racks and showers
- CHPS requires bike lanes, sidewalks at least ¼ mile from the school entrance, racks

Pavement and Drainage

Bio-Retention (Rain Garden)



Cisterns for Water Harvesting



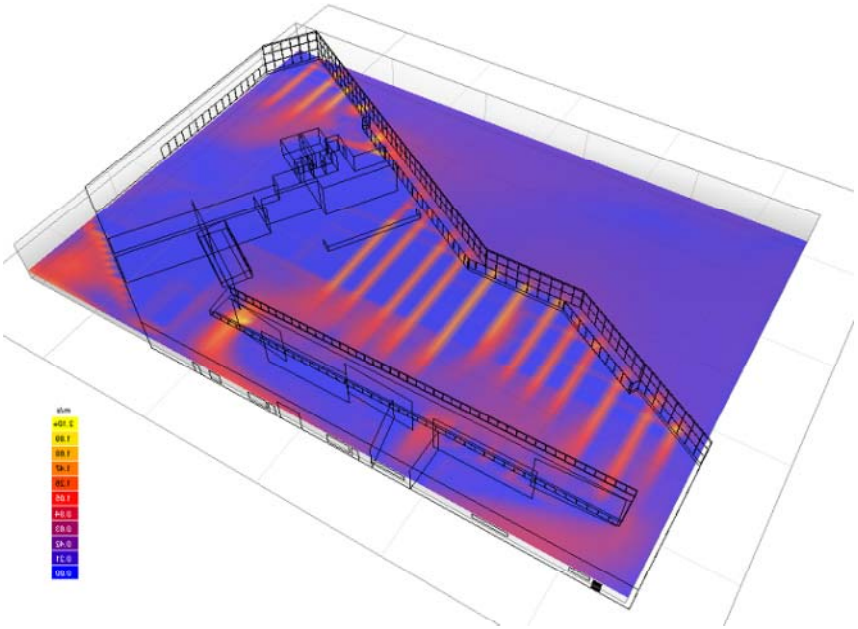
KEMA Sustainability Overview -CCHS

- Who is KEMA? We are an energy consulting firm located in Burlington, MA and in CA.
  - Completed net zero office, DPR Construction in San Diego
  - Currently monitoring and verifying net zero building performance

- KEMA Role – Guide conceptual design of CCHS during feasibility and schematic phases

KEMA Sustainability Overview -CCHS

- We will provide modeling of preferred building options to determine:
  - Optimal new addition or construction orientations
  - Insolation (solar load and access)
  - Are heating/cooling loads externally or internally driven?



- Steps to Reach Net Zero – REDUCE, REDUCE, REDUCE!
  - Reduce building loads
  - Plan infrastructure of future equipment
  - Develop a capital plan for implementation of NZE

KEMA Sustainability Overview -CCHS

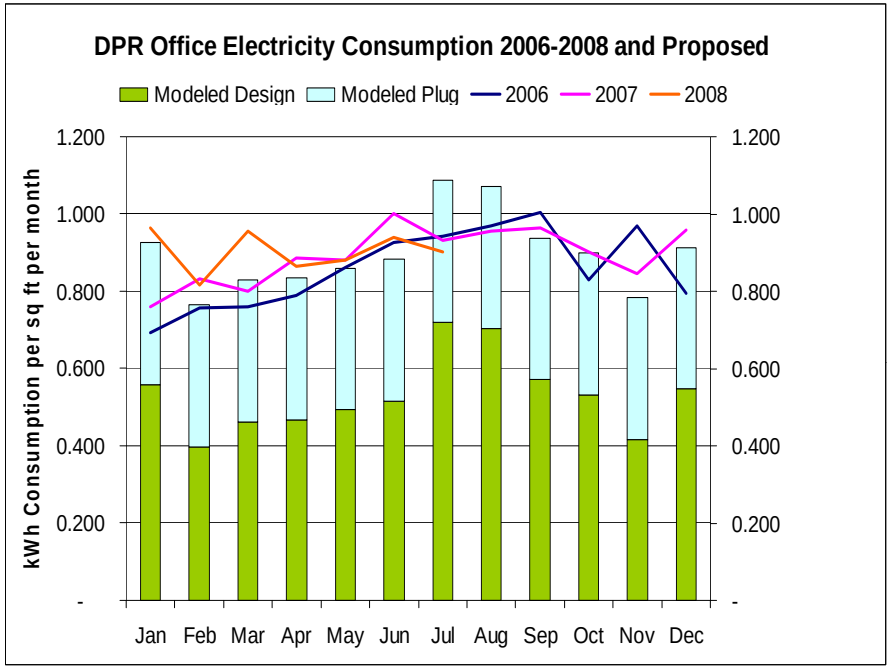
- Use life cycle cost analysis (LCCA) to guide decisions
  - Look long term: Life cycle of 30 years and 50 years
  - Tolerance of first costs versus total cost of ownership
- Utilize Solar Renewable Energy Certificates (SREC's) OR Power Purchase Agreement (PPA)
  - SREC's provide revenue stream once PV installation is complete. Concord-Carlisle School District is the owner.
  - Apply through MassCEC and Department of Energy Resources
  - PPA's – third party ownership; cost of power is guaranteed for minimum time period (e.g 20 years)
  - Work with Concord Municipal Light & Power on interconnection to grid

KEMA Sustainability Overview -CCHS

- Work as early as possible with Concord Municipal & Light & Power as well as National Grid.
  - National Grid has access to thermal related EE incentives
  - CMLP does not have access to energy efficiency incentives

KEMA Sustainability Overview –DPR Construction NZE Building

- Developed an obsolete 1970's tilt up building to be a showcase for sustainable construction
- 10 year whole building initiatives payback
- Maximize daylight – goal is 100%
- Establish an energy budget based on existing DPR building not code
- The building is to be designed to NZE



Total Energy Costs

Target % reduction %	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Model: Design	$ 53,050	$ 56,763	$ 60,737	$ 64,988	$ 69,538	$ 74,405	$ 79,613
10.0%	$ 47,745	$ 51,087	$ 54,663	$ 58,489	$ 62,584	$ 66,965	$ 71,652
20.0%	$ 42,440	$ 45,411	$ 48,589	$ 51,991	$ 55,630	$ 59,524	$ 63,691
30.0%	$ 37,135	$ 39,734	$ 42,516	$ 45,492	$ 48,676	$ 52,084	$ 55,729
40.0%	$ 31,830	$ 34,058	$ 36,442	$ 38,993	$ 41,723	$ 44,643	$ 47,768
50.0%	$ 26,525	$ 28,382	$ 30,368	$ 32,494	$ 34,769	$ 37,203	$ 39,807
Cumulative	*$ (26,525)*	*$ (54,907)*	*$ (85,275)*	*$ (117,769)*	*$ (152,538)*	*$ (189,740)*	*$ (229,547)*

KEMA Sustainability Overview –DPR Construction NZE Building

- Retained existing envelope = construction savings
- Retained existing glazing = construction savings
- Designed building modifications within structural limits = construction savings
- Reduced A/C capacity = construction savings
- Passive ventilation system = construction cost
- 100% daylighting = construction cost
- PV array = construction cost

Cost of Strategies

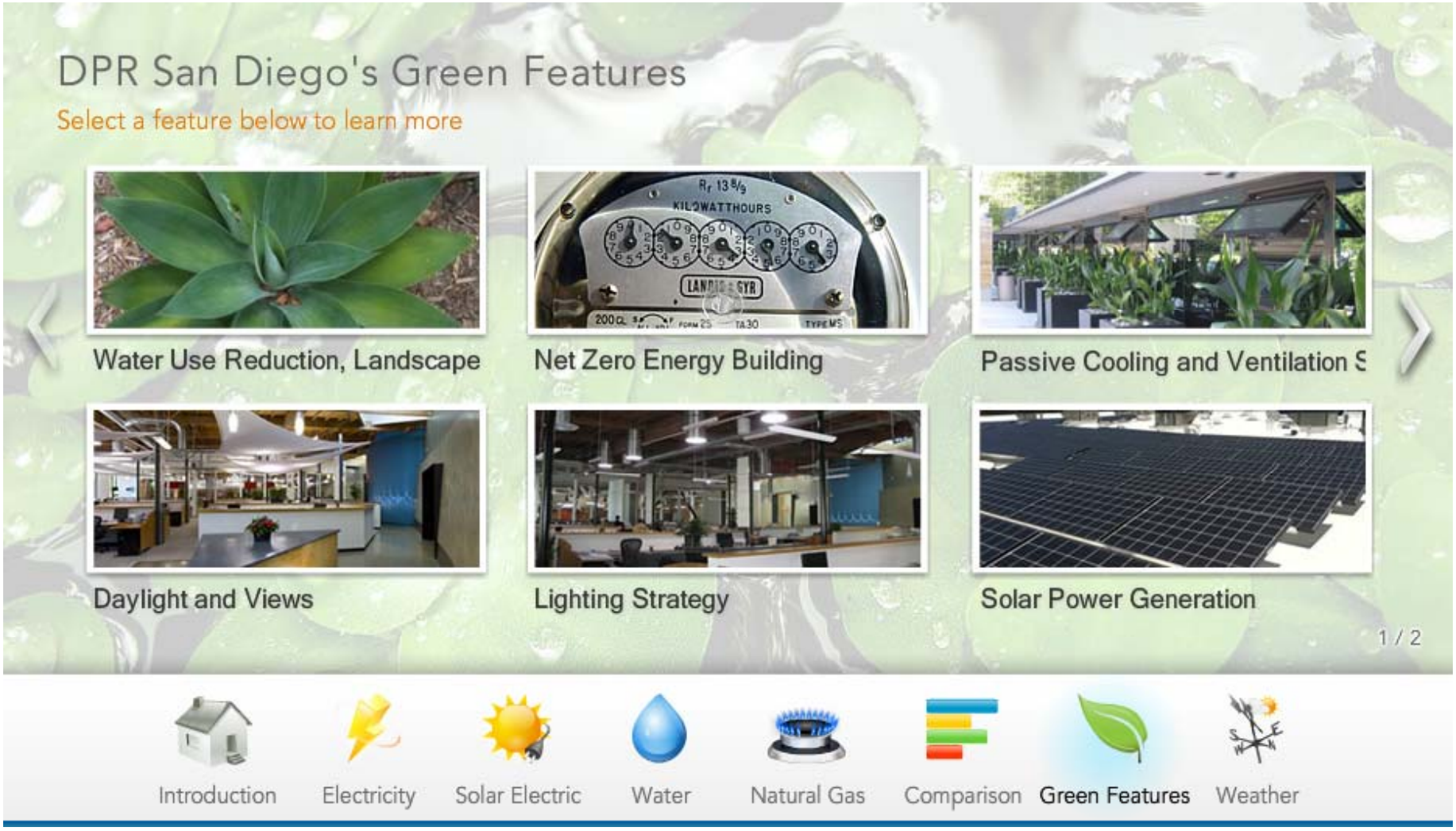
+ Construction Costs

+ Energy Savings

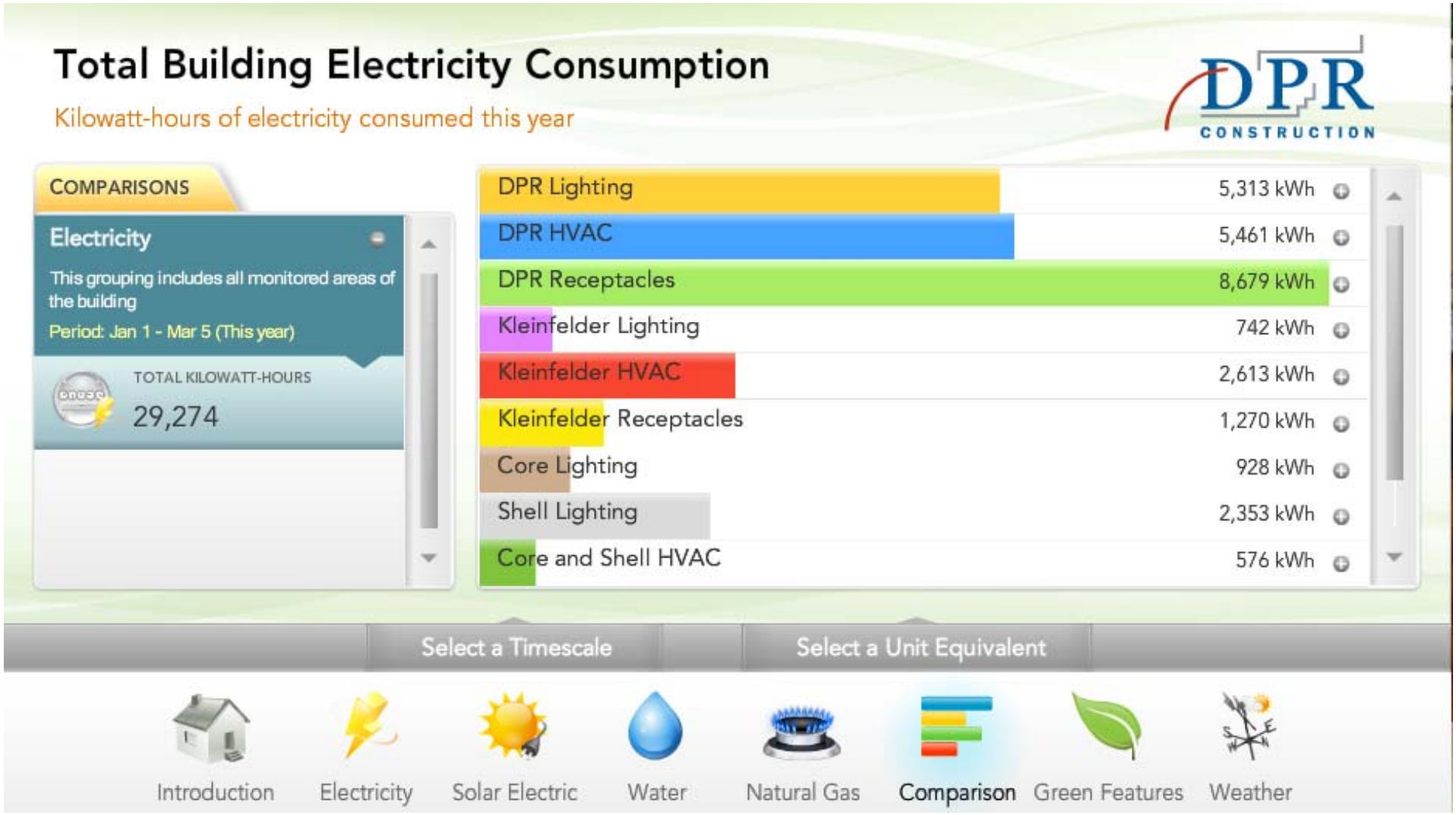
= 10 year payback (is 7.5 yrs)

KEMA Sustainability Overview –DPR Construction NZE Building

http://www.buildingdashboard.com/clients/dpr/sandiego/



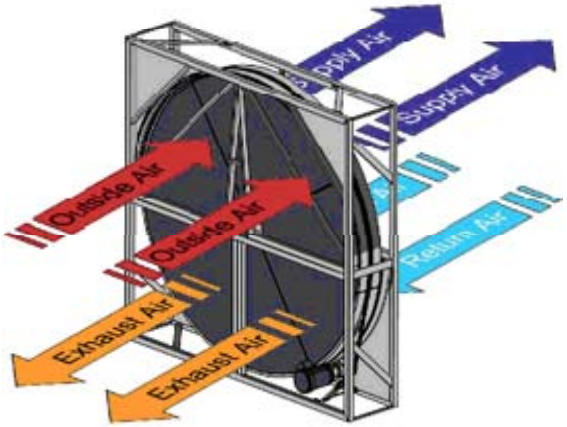
KEMA Sustainability Overview –DPR Construction NZE Building



KEMA Sustainability Overview -CCHS

Mechanical Energy Efficiency Measures

Geothermal Designs for HVAC – Closed Loop, Open Loop (Standing Column), Central Heat Pump Chiller Plant.



Energy Recovery Wheels

Displacement Ventilation

High-Efficiency Gas -Fired Condensing Boilers

High-Efficiency Chiller

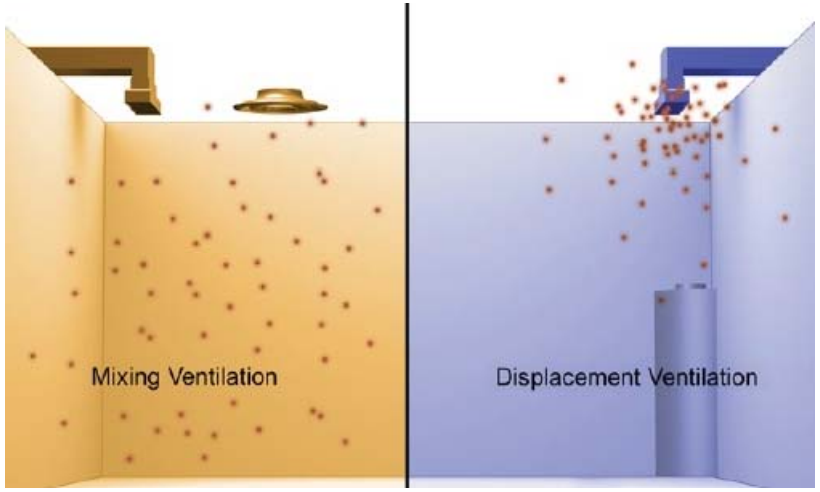
Displacement Ventilation Systems

Benefits:

- Low Noise Levels
- High Level IAQ
- Low First Cost
- High Level of Comfort

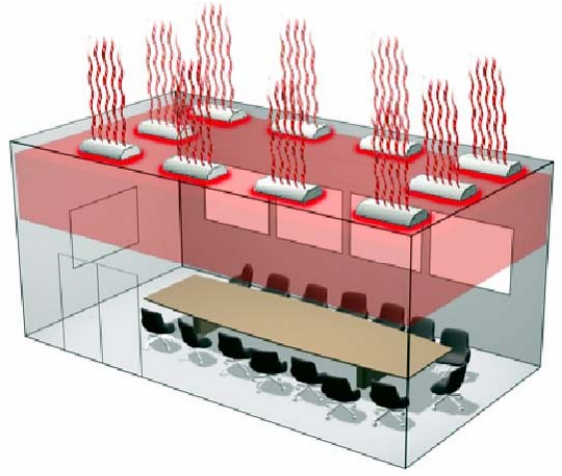
Recent Projects:

- Bourne Elementary School
- Lincoln Elementary School
- Boston Renaissance Charter School
- Wellington Elementary School
- Wayland High School
- Carlisle Public School
- Foxboro Charter School
- Tahanto Regional Middle & High School
- Sutton Middle & High School
- Longmeadow High School



Mixed Systems **DV Systems**

E_c= 0.8 **E_c=1.2 - 1.4**



High Efficiency Indirect/Direct Pendant Lighting

Daylight Harvesting & Occupancy Sensor

- Dual Technology Occupancy Sensor

- Dual Zone Dimming Photocell Sensor

Building Management System For Time of Day Schedule

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LED Site Lighting Designed To Meet Electrical Energy

Conservation Measures but not Exceed IES Guidelines

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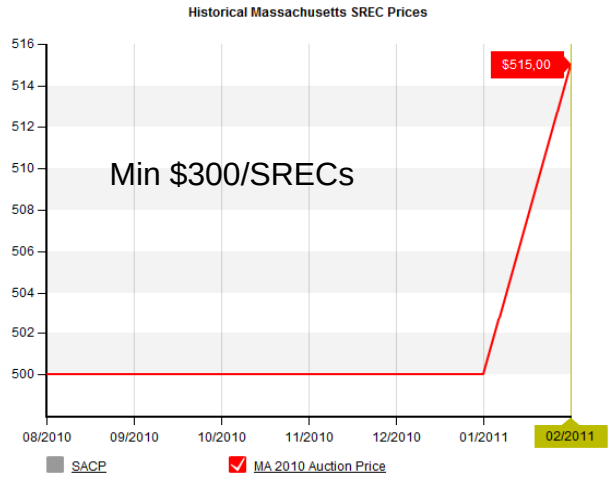
Renewable Energy

- 100kw Photovoltaic System w/ Data Acquisition System



- MA Solar Renewable Energy Certificates(SRECs) Auction History

- (1)SRECs Equal to 1MWh
- System generate 125MWh per yr
- Possible Payback Approximate 11 yrs
- Require Roof Space 10,000 sq/ft
- Supplier Must Sell 15% from Renewable

PV Watts AC Energy & Cost Savings

Cautions for Interpreting the Results

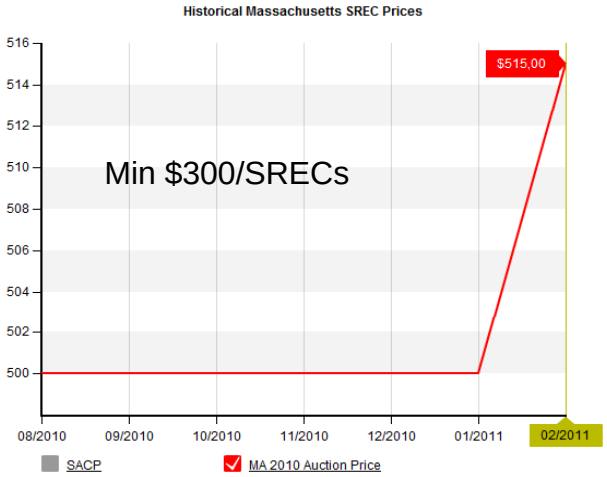
Station Identification	
City:	Boston
State:	Massachusetts
Latitude:	42.37° N
Longitude:	71.03° W
Elevation:	5 m
PV System Specifications	
DC Rating:	100.0 kW
DC to AC Derate Factor:	0.850
AC Rating:	85.0 kW
Array Type:	Fixed Tilt
Array Tilt:	10.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	15.0 ¢/kWh

Results			
Month	Solar Radiation (kWh/m²/day)	AC Energy (kWh)	Energy Value ($)
1	2.31	6114	917.10
2	3.28	8012	1201.80
3	4.19	11120	1668.00
4	4.86	12252	1837.80
5	5.73	14267	2140.05
6	6.10	14244	2136.60
7	6.15	14784	2217.60
8	5.70	13783	2067.45
9	4.64	11043	1656.45
10	3.66	9262	1389.30
11	2.28	5561	834.15
12	1.99	5034	755.10
Year	4.25	125477	18821.55

- PV Watts Calculation

Netzero Renewable Energy

- 1000kw Photovoltaic System w/ Data Acquisition System



- MA Solar Renewable Energy Certificates(SRECs) Auction History

- (1)SRECs Equal to 1MWh
- System generate 1254MWh per yr
- Possible Payback Approximate 11 yrs
- Require Roof Space 100,000 sq/ft
- Supplier Must Sell 15% from Renewable

PVWatts AC Energy & Cost Savings

Station Identification	
City:	Boston
State:	Massachusetts
Latitude:	42.37° N
Longitude:	71.03° W
Elevation:	5 m
PV System Specifications	
DC Rating:	1000.0 kW
DC to AC Derate Factor:	0.850
AC Rating:	850.0 kW
Array Type:	Fixed Tilt
Array Tilt:	10.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	15.0 ¢/kWh

Results			
Month	Solar Radiation (kWh/m²/day)	AC Energy (kWh)	Energy Value ($)
1	2.31	61142	9171.30
2	3.28	80123	12018.45
3	4.19	111200	16680.00
4	4.86	122517	18377.55
5	5.73	142667	21400.05
6	6.10	142442	21366.30
7	6.15	147838	22175.70
8	5.70	137829	20674.35
9	4.64	110429	16564.35
10	3.66	92623	13893.45
11	2.28	55612	8341.80
12	1.99	50345	7551.75
Year	4.25	1254766	188214.90

- PV Watts Calculation

Plumbing Energy Efficiency Measures

- Rain water harvesting from roof areas with water stored in underground storage cistern used for both flushing water closets & urinals and for irrigation.

- High-Efficiency Gas-Fired Water Heaters

- High Efficiency Plumbing Fixtures & Waterless Urinals.

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Next Steps

SBC Meeting #4, April 13, 2011

Review Proposed Alternatives

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LEED for Schools

LEED 2009 for Schools New Construction and Major Renovations
Project Scorecard

Project Name: Concord Carlisle High School
Project Address: 500 Walden street, Concord, MA 01742

Yes	?	No			
13	9	2	**SUSTAINABLE SITES**		**24 Points**
Y			Prereq 1	**Construction Activity Pollution Prevention**	**Required**
Y			Prereq 2	**Environmental Site Assessment**	**Required**
1			Credit 1	**Site Selection**	**1**
	4		Credit 2	**Development Density and Community Connectivity**	**4**
		1	Credit 3	**Brownfield Redevelopment**	**1**
4			Credit 4.1	**Alternative Transportation -** Public Transportation Access	**4**
1			Credit 4.2	**Alternative Transportation -** Bicycle Storage and Changing Rooms	**1**
2			Credit 4.3	**Alternative Transportation -** Low-Emitting and Fuel-Efficient Vehicles	**2**
	2		Credit 4.4	**Alternative Transportation -** Parking Capacity	**2**
	1		Credit 5.1	**Site Development -** Protect or Restore Habitat	**1**
1			Credit 5.2	**Site Development -** Maximize Open Space	**1**
	1		Credit 6.1	**Stormwater Design -** Quantity Control	**1**
1			Credit 6.2	**Stormwater Design -** Quality Control	**1**
		1	Credit 7.1	**Heat Island Effect -** Nonroof	**1**
1			Credit 7.2	**Heat Island Effect -** Roof	**1**
1			Credit 8	**Light Pollution Reduction**	**1**
	1		Credit 9	**Site Master Plan**	**1**
1			Credit 10	**Joint Use of Facilities**	**1**

Yes	?	No			
4	7		**WATER EFFICIENCY**		**11 Points**
Y			Prereq 1	**Water Use Reduction**	**Required**
2	2		Credit 1	**Water Efficient Landscaping**	**2 to 4**
				50% Reduction	2
				No Potable Water Use or Irrigation	4
	2		Credit 2	**Innovative Wastewater Technologies**	**2**
2	2		Credit 3	**Water Use Reduction**	**2 to 4**
				30% Reduction	2
				35% Reduction	3
				40% Reduction	4
	1		Credit 4	**Process Water Use Reduction**	**1**

Yes	?	No			
21	9	3	**ENERGY & ATMOSPHERE**		**33 Points**
Y			Prereq 1	**Fundamental Commissioning of Building Energy Systems**	**Required**
Y			Prereq 2	**Minimum Energy Performance**	**Required**
Y			Prereq 3	**Fundamental Refrigerant Management**	**Required**
15	4		Credit 1	**Optimize Energy Performance**	**1 to 19**
				Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
				Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
				Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
				Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
				Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
				Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
				Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
				Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
				Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
				Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
				Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
				Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
				Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
				Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
				Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
				Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
				Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
				Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
				Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
4	3		Credit 2	**On-Site Renewable Energy**	**1 to 7**
				1% Renewable Energy	1
				3% Renewable Energy	2
				5% Renewable Energy	3
				7% Renewable Energy	4
				9% Renewable Energy	5
				11% Renewable Energy	6
				13% Renewable Energy	7
2			Credit 3	**Enhanced Commissioning**	**2**
		1	Credit 4	**Enhanced Refrigerant Management**	**1**
	2		Credit 5	**Measurement and Verification**	**2**
		2	Credit 6	**Green Power**	**2**

LEED for Schools

Yes	?	No			
5	3	5	**MATERIALS & RESOURCES**		**13 Points**
Y			Prereq 1	**Storage and Collection of Recyclables**	**Required**
		2	Credit 1.1	**Building Reuse** - Maintain Existing Walls, Floors and Roof	**1 to 2**
				Reuse 75%	1
				Reuse 95%	2
		1	Credit 1.2	**Building Reuse -** Maintain Interior Non-Structural Elements	**1**
2			Credit 2	**Construction Waste Management**	**1 to 2**
				50% Recycled or Salvaged	1
				75% Recycled or Salvaged	2
		2	Credit 3	**Materials Reuse**	**1 to 2**
				5% Reuse	1
				10% Reuse	2
1	1		Credit 4	**Recycled Content**	**1 to 2**
				10% of Content	1
				20% of Content	2
1	1		Credit 5	**Regional Materials**	**1 to 2**
				10% of Materials	1
				20% of Materials	2
1			Credit 6	**Rapidly Renewable Materials**	**1**
	1		Credit 7	**Certified Wood**	**1**

Yes	?	No			
14	5	1	**INDOOR ENVIROMENTAL QUALITY**		**19 Points**
Y			Prereq 1	**Minimum Indoor Air Quality Performance**	**Required**
Y			Prereq 2	**Environmental Tobacco Smoke (ETS) Control**	**Required**
Y			Prereq 3	**Minimum Acoustical Performance**	**Required**
1			Credit 1	**Outdoor Air Delivery Monitoring**	**1**
		1	Credit 2	**Increased Ventilation**	**1**
1			Credit 3.1	**Construction Indoor Air Quality Management Plan -** During Construction	**1**
1			Credit 3.2	**Construction Indoor Air Quality Management Plan -** Before Occupancy	**1**
4			Credit 4	**Low-Emitting Materials**	**Up to 4**
				4.1 - Adhesives & Sealants	1
				4.2 - Paints & Coatings	1
				4.3 - Flooring Systems	1
				4.4 - Composite Wood & Agrifiber Products	1
				4.5 - Furniture & Furnishings	1
				4.6 - Ceiling & Wall Systems	1
1			Credit 5	**Indoor Chemical and Pollutant Source Control**	**1**
1			Credit 6.1	**Controllability of Systems -** Lighting	**1**
1			Credit 6.2	**Controllability of Systems -** Thermal Comfort	**1**
1	1		Credit 7.1	**Thermal Comfort -** Design	**1**
	1		Credit 7.2	**Thermal Comfort -** Verification	**1**
1	2		Credit 8.1	**Daylight and Views**	**1 to 3**
				75% of classrooms	1
				90% of classrooms	2
				75% of other spaces	2 to 3
1			Credit 8.2	**Daylight and Views -** Views	**1**
	1		Credit 9	**Enhanced Acoustical Performance**	**1**
1			Credit 10	**Mold Prevention**	**1**

Yes	?	No		
4	2		**INNOVATION IN DESIGN**	**6 Points**
2	2		Credit 1	**Innovation in Design** 1 to 4
				Innovation or Exemplary Performance 1
				Innovation or Exemplary Performance 1
				Innovation or Exemplary Performance 1
				Innovation 1
1			Credit 2	**LEED® Accredited Professional** 1
1			Credit 3	**School as a Teaching Tool** 1

Yes	?	No		
1	2	1	**REGIONAL PRIORITY**	**4 Points**
1	2	1	Credit 1	**Regional Priority** 1 to 4
				Regionally Defined Credit Achieved SSc2, SSc3, MRc1.1 - NA 1
				Regionally Defined Credit Achieved SSc6.2 - YES 1
				Regionally Defined Credit Achieved WEc2 - Depends on client decision ($) 1
				Regionally Defined Credit Achieved EAc2 - Depends on client decision ($) 1

Yes	?	No		
62	37	12	**PROJECT TOTALS (Certification Estimates)**	**110 Points**

Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points

MA CHPS 2009

Collaborative for High Performance Schools (CHPS)

PROJECT APPLICATION: Concord Carlisle High School

Based on the 2009 Edition

III. CHPS Scorecard

When your project is ready to be screened and reviewed, notify CHPS by faxing or emailing the registration form signed. On this scorecard, you should have placed a check mark in the "ready for review" column for the deisgn review, and when it is time for the construction review for each prerequisite and credit claimed signifying that its template has been completed and that all supporting attachments and documents have been uploaded to your project CHPS website. Check with CHPS for alternative, equivalent submittals that may be acceptable.

***Key:** **T** -Template Required, **A** -Attachment Required, **CD** -Construction Document Required, **CA** - Construction Audit Requirement*

CHPS SECTION	CREDIT NUMBER	TITLE	POSSIBLE POINTS	POINTS CLAIMED	NOTES	TEAM MEMBER RESPONSIBLE	DESIGN REVIEW REQUIREMENTS			READY FOR REVIEW	CONSTRUCTION REVIEW REQUIREMENTS		READY FOR REVIEW	CONSTRUCTION AUDIT REQUIREMENT
INTEGRATION AND INNOVATION (2 prerequisites; 11 possible points)														
STRATEGY	II.P1	Integrated Design	Req	REQ			T	A	-		-	-		-
	II.P2	Educational Display	Req	REQ			T	-	CD		-	A		-
	II.C1	Demonstration Areas	1	-			T	-	CD		-	A		-
	II.C2	Innovation	1-4	2			T	A	-		-	A		-
	II.C3	Life Cycle Cost Analysis	3	3			T	A	-		-	-		-
	II.C4	School Garden	1	1			T	A	CD		T	-		CA
	II.C5	School Master Plan	1				T	A	-		-	-		-
INDOOR ENVIRONMENTAL QUALITY (4 prerequisites; 26 possible points)														
DESIGN	EQ.P1	HVAC Design - ASHRAE 62.1	Req	REQ			T	A	CD		T	-		-
	EQ.P2	Construction IAQ Management	Req	REQ			T	-	CD		T	A		-
	EQ.P3	Pollutant and Chemical Source Control	Req	REQ			T	A	CD		T	-		CA
	EQ.P4	Moisture Management	Req	REQ			T	-	CD		T	A		-
	EQ.P5	Minimum Filtration	Req	REQ			T	-	CD		T	-		CA
	EQ.P6	Thermal Comfort - ASHRAE 55	Req	REQ			T	A	CD		-	-		-
	EQ.P7	View Windows, 70%	Req	REQ			T	-	CD		T	-		CA
	EQ.P8	Eliminate Glare	Req	REQ			T	A	CD		T	-		-
	EQ.P9	Minimum Acoustical Performance	Req	REQ			T	A	CD		-	-		-
	EQ.P10	Minimum Low Emitting Materials	Req	REQ			T	A	CD		T	A		-
DESIGN	EQ.C1	View Windows, 80 – 90%	1-2	1			-	-	-		-	-		-
	EQ.C2	Daylighting in Classrooms	1-6	3			T	-	CD		T	-		CA
ESIGN	EQ.C3	Advanced Low-Emitting Materials	1-4	2			T	-	CD		T	-		CA

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DESIGN	EQ.C4	Ducted Returns	1	1			T	-	CD		T	-		-
	EQ.C5	Enhanced Filtration	1	-			T	-	CD		T	-		CA
	EQ.C6	Post-Construction IAQ	1	1			T	A	CD		T	-		-
	EQ.C7	Enhanced Acoustical Performance	1-4	3			T	-	CD		T	-		CA
	EQ.C8	Controllability of Systems	1-2	2			T	-	CD		T	-		CA
	EQ.C9	Duct Access & Cleaning	1	1			T	-	CD		T	-		CA
	EQ.C10	Electric Lighting	1	1			T	A	CD		T	-		CA
ENERGY (3 prerequisites; 36 possible points; minimum 2 points required)														
DESIGN	EE.P1	Minimum Energy Performance	Req	REQ			T	A	CD		T	-		-
	EE.P2	Commissioning	Req	REQ			T	A	CD		T	A		-
	EE.P3	Facility Staff & Occupant Training	Req	REQ			T	A	-		T	-		-
	EE.C1(A	Superior Energy Performance (Performance Approach)	1-15	12	To achieve net zero, need 40% more efficient than		-	-	-		-	-		-
	EE.C1(B	Superior Energy Performance (Prescriptive Approach)	2-4	-			T	-	CD		T	-		-
DESIGN	EE.C2	Minimize Air Conditioning	1-3	3			T	-	CD		T	-		-
	EE.C3	Renewable Energy	1-12	5			T	A	CD		T	-		CA
	EE.C4	Plug Load Reduction & ENERGY STAR Equipment	1	1			T	A	CD		T	-		CA
	EE.C5	Energy Management System and Sub Metering	1-3	3			T	A	CD		T	A		-
	EE.C6	Flex Energy	1-2	1			T	-	CD		-	-		-
WATER (2 prerequisite; 16 possible points)														
DESIGN	WE.P1	Irrigation System Performance on Recreational Fields	Req	REQ			T	-	CD		T	-		CA
	WE.P2	Indoor Water Use Reduction, 20%	Req	REQ			T	-	CD		T	-		CA
	WE.C1	Indoor Water Use Reduction, 30-40%	1-3	1			-	-	-		-	-		-
	WE.C2	Reduce Potable Water Use for Sewage Conveyance	4	-	Will project pursue rainwater cachement?		T	-	CD		T	-		CA
DESIGN	WE.C3	No Potable Water Use for Non-Recreational Landscaping Areas	3	3			T	-	CD		T	-		CA
	WE.C4	Reduce Potable Water Use for Recreational Landscaping Areas	2	-			T	-	CD		T	-		CA
	WE.C5	Irrigation System Commissioning	1	-			T	A	CD		T	A		CA
	WE.C6	Water Management System	1-3	3			T	A	CD		T	-		CA
SITE (1 prerequisite; 16 possible points)														
DESIGN	SS.P1	Joint Use of Facilities and Parks	Req	REQ			T	A	CD		T	-		-
	SS.C1	Sustainable Site Selection	1-5	5			T	A	CD		T	-		-
	SS.C2	Central Location / Smart Growth	1	1			T	A	-		-	-		-
	SS.C3	Reduced Building Footprint	1	1			T	-	-		-	-		-
DESIGN	SS.C4	Building Layout & Microclimates	1	-			T	A	CD		T	-		CA
	SS.C5	Public Transportation	1	1			T	A	-		-	-		-
	SS.C6	Pedestrian/Bike/Human Powered Transportation	2	-	TBD by CCHS SBC		T	A	CD		T	-		CA
	SS.C7	Parking Minimization	1	-	Parking configuration unknown at this stage of		T	-	CD		T	-		CA
DESIGN	SS.C8	Post-Construction Stormwater Management	1	1			T	A	CD		T	-		CA
	SS.C9	Reduce Heat Islands – Landscaping	1	-			T	-	CD		T	-		CA
	SS.C10	Reduce Heat Islands – Cool Roofs	1	1			T	-	CD		T	-		CA
	SS.C11	Light Pollution Reduction	1	1			T	-	CD		T	-		CA

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MATERIALS & WASTE MANAGEMENT (2 prerequisite; 14 possible points)															
DESIGN	MW.P1	Storage and Collection of Recyclables	Req	REQ			T	A	CD		T	-		CA
DESIGN	MW.P2	Minimum Construction Site Waste Management, 75%	Req	REQ			T	-	CD		T	A		-
DESIGN	MW.C1	Minimum Construction Site Waste Management, 90%	1	1			-	-	-		-	-		-
DESIGN	MW.C2	Single Attribute - Recycled Content Materials	1-2	1			T	-	CD		T	-		CA
DESIGN	MW.C3	Single Attribute - Rapidly Renewable Materials	1	1			T	-	CD		T	-		CA
DESIGN	MW.C4	Single Attribute - Certified Wood	1	-			T	-	CD		T	-		CA
DESIGN	MW.C5	Single Attribute - Regional Materials	1-2	1			T	-	CD		T	-		CA
DESIGN	MW.C6	Material Re-Use	1	-			T	-	CD		T	-		CA
DESIGN	MW.C7	Durable and Low Maintenance Flooring	1	1			T	-	CD		-	-		CA
DESIGN	MW.C8	Building Reuse – Exterior	1-4	-			T	-	CD		T	-		CA
DESIGN	MW.C9	Building Reuse – Interior	1	-			T	-	CD		T	-		CA
OPERATIONS & MAINTENANCE (3 prerequisites; 9 possible points)															
PERFORMANCE	OM.P1	Maintenance Plan	Req	Req			T	-	-		-	A		-
PERFORMANCE	OM.P2	Anti-Idling Measures	Req	Req			T	-	-		-	A		-
PERFORMANCE	OM.P3	Green Cleaning	Req	Req			T	-	-		-	A		-
PERFORMANCE	OM.C1	Work Order and Maintenance Management System	1	1	In place for Willard		T	A	-		-	-		-
PERFORMANCE	OM.C2	Indoor Environmental Management	1-3	3	In place for Willard		T	A	-		-	A		-
PERFORMANCE	OM.C3	Green Power	1	-			T	A	-		-	-		-
PERFORMANCE	OM.C4	Climate Change Action: Diesel Bus Retrofit	1	-			T	A	-		-	-		-
PERFORMANCE	OM.C5	Carbon Footprint Reporting	1	-			T	A	-		-	-		-
PERFORMANCE	OM.C6	Energy Benchmarking	3	3	Needs to occur as part of M&V of building		T	A	-		-	-		-
TOTAL POINTS POSSIBLE (127)				76										